

Application No.: 10/728,283

Docket No.: 65857-0118

REMARKS

Applicant has carefully reviewed the Office Action mailed February 23, 2005 and thanks Examiner Lorence for pointing out the informalities in the specification and claims. The specification and claims 1, 5, 9, and 17 were objected to because of several minor informalities. Paragraph [0012] of the specification and claims 1, 5, 9, and 17 have been amended as requested by the Examiner.

Claims 15 and 17 – 20 have been rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 10, 12, 13, 15, 17, 18, and 20 have been rejected under 35 U.S.C. §102(b) as being anticipated by McAdams et al. (U.S. Patent No. 1,966,100). Claims 13 – 15 and 18 have been rejected under 35 U.S.C. §103 (a) as being unpatentable over McAdams in view of Spase. (U.S. Patent No. 2,354,621). Claims 1 – 20 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Lepard et al. (U.S. Patent No. 6,102,181) in view of McAdams et al.

Claims 15 and 17 – 20 have been amended to address the Examiner's objections and rejections under 35 U.S.C. §112. These amendments are not being made to overcome any rejection or to modify the scope of the claims. Claims 1, 9, 10 and 17 have been amended to overcome the rejection under 35 U.S.C. §102(b) as being anticipated by McAdams et al. Applicant's arguments and amendments to claims 10 and 17 should remove the rejection under 35 U.S.C §103(a) as being unpatentable over Lepard et al. in view of McAdams et al. Accordingly, claims 1 – 20 are pending in this application. Applicant respectfully requests reconsideration of the present application in view of the following remarks. No new matter has been added.

I. Objection to the specification

The specification was objected to because of the following informalities: The brief description of Figure 7 in paragraph [0012] is incorrect. The suggested correction has been made. The objection is respectfully traversed.

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II. Objection of claims 1, 5, 9, 17

Claims 1, 5, 9, and 17 have been objected to because of typographical informalities. The suggested correction has been made. The objection is respectfully traversed.

III. Rejection of claims 15 and 17 – 20 under 35 U.S.C. §112

The Examiner rejected claims 15 and 17 – 20 under 35 U.S.C. §112, second paragraph. The rejection is respectfully traversed.

Claim 15 recites the limitation “said roller bearing” in line 2 and should depend from claim 13 rather than claim 10. *See Office Action page 3, lines 12 – 14.* Claim 15 has been made to depend from claim 13 rather than claim 10 as the Examiner has suggested.

The Examiner asserts that the preamble of claim 17 is incorrect. Specifically, the roller assembly 54 is not secured in the fork shaft 46, but rather in the bearing support shaft 60. *See Office Action page 3, lines 15 – 16.* The roller assembly 54 *includes* support shaft 60 as shown in FIG. 3. Applicant has amended the preamble in claim 17 to replace fork shaft 46 with opening 64.

Applicant has amended claim 19 to address the Examiner’s concern regarding “a plurality of grooves in the bearing” by clarifying that the snap ring is disposed in a groove in the bearing element. Applicant submits that the amendments to claims 15, 17, and 19 overcome the Examiner’s rejection of claims 15 and 17 – 20 under 35 U.S.C. §112. Withdrawal of the rejection is respectfully requested.

IV. Rejection of claims 10, 12, 13, 15, 17, 18, and 20 under 35 U.S.C. §102 (b) – McAdams et al.

Claims 10, 12, 13, 15, 17, 18, and 20 have been rejected under 35 U.S.C. §102 (b) as being anticipated by McAdams et al. (U.S. Patent No. 1,966,100). The rejection is respectfully traversed.

To anticipate a claim, the reference must teach every element of the claim. “A claim is anticipated only if each and every element as set forth in the claim is found, either expressly

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or inherently described, in a single prior art reference."¹ "The identical invention must be shown in as complete detail as is contained in the ... claim."²

Amended claim 10 is directed to a plurality of respective bearing support shafts attached to an inboard side of the forks, the bearing support shafts whereby an outward force applied to said retention flange is transmitted through said retention flange and bypasses a corresponding support shaft such that said bearing elements are protected from undesirable end loading. As noted by the Examiner, McAdams teaches bearing support shafts that "are formed by threaded bolts." *See Office Action page 4, lines 11 – 12*. Moreover, the claimed invention "protects the bearing element from undesirable end loading." *See Application at page 5, para. 27*.

McAdams teaches that each threaded bolt extends through an opening in the fork section 33 and is held in place by a nut and pin disposed on an outboard side of the forks as best seen in Fig. 1. McAdams does not teach, suggest, or contemplate having the bearing support shaft attached to an interior surface of an opening in the fork as claimed by the Applicant. Moreover, McAdams teachings do not contemplate protecting the bearing element from undesirable end loading as disclosed by the Applicant. Therefore, the claimed invention teaches away from McAdams. For at least this reason, claim 10 is patentable over the prior art of record. Claims 12, 13, and 15 depend from independent claim 10 and are also patentable for at least the same reason. Applicant has also amended claim 17 to include similar key limitations that teach away from McAdams for the same reason. Claims 18 and 20 depend from independent claim 17 and are also patentable for at least the same reason. Withdrawal of the rejection is respectfully requested.

Furthermore, dependent claim 15 is independently patentable. Claim 15 states that the flange substantially covers an end portion of the bearing element. This limitation further protects the roller bearing from harmful contamination. *See Application at para. 27*. McAdams does not teach, suggest, or contemplate this limitation. Accordingly, for at least this reason, withdrawal of the rejection is respectfully requested.

V. Rejection of claims 13 – 15 and 18 under 35 U.S.C. §103 (a) – McAdams and Spase

¹ *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987).

² *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

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Claims 13 – 15 and 18 have been rejected under 35 U.S.C. §103 (a) as being unpatentable over McAdams in view of Spase. (U.S. Patent No. 2,354,621). The rejection is respectfully traversed.

To establish a *prima facie* case of obviousness, three basic criteria must be met: First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all of the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in applicant's disclosure.³

In determining the differences between the prior art and the claims, the question under 35 U.S.C. 103 is not whether the differences themselves would have been obvious, but whether the claimed invention as a whole would have been obvious.⁴ "In determining whether the invention as a whole would have been obvious under section 103, we must first delineate the invention as a whole. In delineating the invention as a whole, we look not only to the subject matter which is literally recited in the claim in question . . . but also those properties of the subject matter that are inherent in the subject matter and are disclosed in the specification . . . Just as we look to a chemical and its properties when we examine the obviousness of a composition of matter claim, it is this invention as a whole, and not some part of it, which must be obvious under section 103."⁵

The Examiner asserts that Spase discloses needle bearings and that it is believed that one having ordinary skill in the art at the time the invention was made would recognize that by mounting the bearing elements on the forks via a roller or needle bearing the amount of friction generated between the bearing element and the support shaft would be reduced leading to the desirable result of decreased wear. *See Office Action page 5, lines 3 – 12.*

First, as stated above, independent claim 10 is patentable for the reasons discussed above. Thus, the claims that depend from claim 10 are also patentable. Further, dependent claims 13 and 14 are independently patentable over the prior art because the Examiner has

³ *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

⁴ *Stratoflex, Inc. v. Aeroquip Corp.*, 713 F.2d 1530, 218 USPQ 871 (Fed. Cir. 1983).

⁵ *In re Antonie*, 559 F.2d 618, 195 USPQ 6,8 (CCPA 1977).

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not shown that McAdams contemplates or suggests using bearings such as roller bearings (claim 13) or needle bearings (claim 14). Spase shows "objects" near the rollers 35 but doesn't disclose what those "objects" are. The Examiner has no basis to assert that these are roller bearings, ball bearings, or needle bearings. There is nothing in the specification that describes what is near the rollers 35 and there are no clear views that show the "objects" or their disposition. Finally, there is nothing that states that these "objects" are inside the rollers.

Amended independent claim 17, from which claim 18 depends is patentable for the reasons discussed above. Thus, dependent claim 18 is also patentable. However, claim 18 is independently patentable. Claim 18 recites that the bearing element is a roller bearing including one of a needle bearing, a ball bearing, a sleeve bearing, and a plastic bearing. However, once again the types of bearings are not taught or suggested by the prior art of record. Thus, claim 18 is independently patentable. Spase shows "objects" near the rollers 35 but doesn't disclose what those "objects" are. The Examiner has no basis to assert that these are roller bearings, ball bearings, or needle bearings. Nor is there any indication that these "objects" are inside the rollers 35. Finally, the Examiner has not pointed to a specific reference that teaches protecting the bearing element from undesirable end loading.

For at least these reason, claims 13 – 15 and 18 are patentable over the prior art of record. Withdrawal of the rejection is respectfully requested.

VI. Rejection of claims 1 – 20 under 35 U.S.C. §103 (a) – McAdams and Lepard

Claims 1 – 20 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Lepard et al. (U.S. Patent No. 6,102,181) in view of McAdams et al. Applicants respectfully traverse these rejections.

At the time that the invention was made, both the present application and Lepard were subject to an obligation of assignment to Eaton Corporation of Cleveland, Ohio. Applicant has recognized the benefits of the claimed invention over the teachings of Lepard as stated in the application.

The Examiner asserts that "since Lepard et al. and McAdams et al. are both from the same field of endeavor, one having ordinary skill in the art would recognize that the rollers 70 of Lepard could be mounted to the fork arms of the yoke in the manner shown by McAdams et al." While the Examiner acknowledges that a specialized tool is required in the assembly of Lepard's device, he suggests that it would have been obvious to use commonly found tools

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such as wrenches and screwdrivers instead of the specialized tool "since the threaded nut and bolt employed by McAdams et al. require only tools such as wrenches and screwdrivers." See *Office Action page 6, lines 11 – 19*.

A. Neither McAdams nor Lepard teach or solve the end loading problem

As discussed above, Applicant has amended independent claims 1, 9, 10, and 17 to further clarify the claimed invention by claiming that an outward force applied to said retention flange is transmitted through said retention flange and bypasses a corresponding support shaft such that said bearing elements are protected from undesirable end loading. Specifically, the application teaches that the roller assembly 54 "protects the bearing element from undesirable end loading." See *Application at page 5, para. 27*. Therefore, the claimed invention teaches away from McAdams. In view of the amendments, withdrawal of the rejection is respectfully requested.

A problem with the prior art roller assemblies is that they exhibit premature failure from end loading. The invention provides a solution to the end loading problem by providing a retention flange formed at one end of the bearing support shaft to hold the bearing element in the proper position and to protect the bearing from end loading. See *Application at page 1, para. 4*. Furthermore, the assembly provides enhanced performance while simplifying and reducing cost since the bearing element can be held between the retention flange and the inner surface of the fork without requiring the ring 86. See *Application at page 2, para. 5*.

Lepard teaches a roller assembly having a ring 86 and bushings 82. The problem with the teaching in Lepard is that the bushings wear out prematurely due to the excessive end loading as stated above. This excessive end loading is not remedied by the teaching of McAdams. Applying McAdams to the problem does nothing to overcome the end loading problem. The bolt and nut combination in McAdams creates a binding condition that causes the rollers lock to the body of the fork. Furthermore, the bolt and nut combination in McAdams may result in a binding condition as a result of over tightening the nut and bolt combination causing the rollers to lock to the body of the fork. This zero tolerance clearance between the rollers 34 and the yoke 33 causes the rollers not to rotate resulting in a failure condition. Moreover, there is nothing disclosed in McAdams that prevents an over tightening condition. Fig. 2 shows a dashed line on rollers 34 indicating an inner diameter of the bearing and nothing in the specification discloses anything to the contrary. Therefore, the outwardly directed operational forces applied to the bearings in both McAdams and Lepard result in

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binding conditions and failure from end loading. In contrast, the Applicant has a bearing protected from outwardly directed operational forces by providing a novel flange and pin combination that protects the bearing from end loading and prevents binding between the bearing and the fork. Accordingly, withdrawal of the rejection is respectfully requested.

B. The rollers are not mounted to the forks in a manner shown by McAdams

The support shafts are attached on an inboard side of the forks and "between flange 68 and an inner surface 70 of arm 52 adjacent to opening 64." *See Application at page 5, para. 23.* The independent claims 1, 9, 10, and 17 state that an outward force applied to said retention flange is transmitted through said retention flange and bypasses a corresponding support shaft such that said bearing elements are protected from undesirable end loading. Specifically, the application teaches that the roller assembly 54 "protects the bearing element from undesirable end loading." *See Application at page 5, para. 27.* The support shafts are not "mounted to the fork arms of the yoke in the manner shown by McAdams" as asserted by the Examiner. Moreover, McAdams shows each threaded bolt extending through an opening in the fork section 33 and being held in place by a nut and pin disposed on an outboard side of the forks as best seen in Fig. 1. The bearing support shafts are not attached to the forks by a nut and a pin disposed at the end of the support shaft as taught by McAdams. Neither Lepard nor McAdams teach, suggest, or contemplate a plurality of respective bearing support shafts attached to an inboard side of said forks wherein an outward force applied to said retention flange is transmitted through said retention flange and bypasses a corresponding support shaft such that said bearing elements are protected from undesirable end loading as claimed by the Applicant. Neither McAdams nor Lepard teach, suggest, or contemplate this limitation. Accordingly, for at least these reasons, withdrawal of the rejection is respectfully requested.

Furthermore, dependent claims 8 and 15 are independently patentable. Claims 8 and 15 state that the flange substantially covers an end portion of the bearing element. This limitation further protects the roller bearing from harmful contamination. *See Application at para. 27.* Neither McAdams nor Lepard teach, suggest, or contemplate this limitation. Accordingly, for at least this reason, withdrawal of the rejection is respectfully requested.

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VII. Conclusion

In view of the above, each of the presently pending claims in this application is believed to be in condition for allowance. Accordingly, the Examiner is respectfully requested to pass this application to issue.

It is believed that any additional fees due with respect to this paper are identified in the accompanying transmittal. However, if any additional fees are required in connection with the filing of this paper, permission is given to charge account number 18-0013 in the name of Rader, Fishman & Grauer PLLC.

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Respectfully submitted,

By 

Michael B. Stewart,

Registration No.: 36,018

RADER, FISHMAN & GRAUER PLLC

39533 Woodward Avenue, Suite 140

Bloomfield Hills, Michigan 48304

(248) 594-0633

Attorney for Applicants

Customer No. 010291

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